

Encompass



THE UNIVERSITY OF
SYDNEY

Dentistry alumni magazine

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Looking forward to 2017



With 2017 now upon us, it's important to highlight our upcoming activities for the year.

We continue with our mission of putting the mouth into health and I am proud to report that Professor Joerg Eberhard, Associate Professor Ky-Anh Nguyen and Dr Juliano Morimoto together with outstanding researchers from the Charles Perkins Centre and the Westmead Hospital were awarded a University-wide Sydney Research Excellence Initiative (SREI) 2020 grant, *Connecting oral health and traditional risk factors to health burdens: A new paradigm for understanding and preventing common chronic diseases*.

This is great news and reinforces our mission to put the mouth into health. During 2017, we expect to build on this success with our researchers further succeeding in integrating oral and systemic health.

We are also finalising our strategic initiatives to direct us over the next five years to achieve our vision of optimising health and wellbeing through excellence in dental education and research. I want to thank everyone for their input to develop our goals of research excellence, a distinctive Sydney education and respect for our cultures and values.

We are aligning our activities with those in other health disciplines and other key stakeholders including NSW Health, industry and the communities which we serve. Importantly, we are developing our capacity in data sciences in order to monitor, analyse and better perform everything that we do. This is aligned to the University's Centre for Translational Data Science, which provides a critical mass to progress this goal.

We have a busy year ahead with Australian Dental Council accreditation reviews of the Bachelor of Oral Health and Doctor of Dental Medicine and an Academic Board review of the faculty.

These are just a few examples of our upcoming activities. Together with the continuing consolidation of the health faculties at the University, 2017 will provide enormous opportunity to enhance our effectiveness and efficiency. We will maximise success as we underpin our research, education and service activities with a collaborative approach.

Chris Peck
Dean, Faculty of Dentistry

US\$2.4m grant to improve dental provider delivery of brief tobacco interventions

Tobacco use remains the leading preventable cause of death and is relevant in dentistry as a significant risk factor for gum disease and oral cancer.

Professor Heiko Spallek, together with Dr Brad Rindal, researcher at HealthPartners in Minnesota, will lead a US\$2.4 million federal grant from the National Institute of Dental and Craniofacial Research, part of National Institutes of Health (NIH) to evaluate the effectiveness of clinical decision support to improve dental provider delivery of brief tobacco interventions.

The clinical decision support system will be integrated within two commonly used electronic dental record systems and will generate personalised evidence-based recommendations for dentists to actively engage their smoking patients in the course of usual dental care.

For details about the large group-randomised trial, visit <https://projectreporter.nih.gov> (search for 'Rindal' in the 'Principal Investigator' field).



Left to right: Professor Heiko Spallek, Pro-Dean of the Faculty of Dentistry; Dr Alexander Holden, Lecturer in Dental Ethics, Law and Professionalism; Dr Susie Dracopoulos (prize winner) and Professor Chris Peck, Dean of the Faculty of Dentistry.

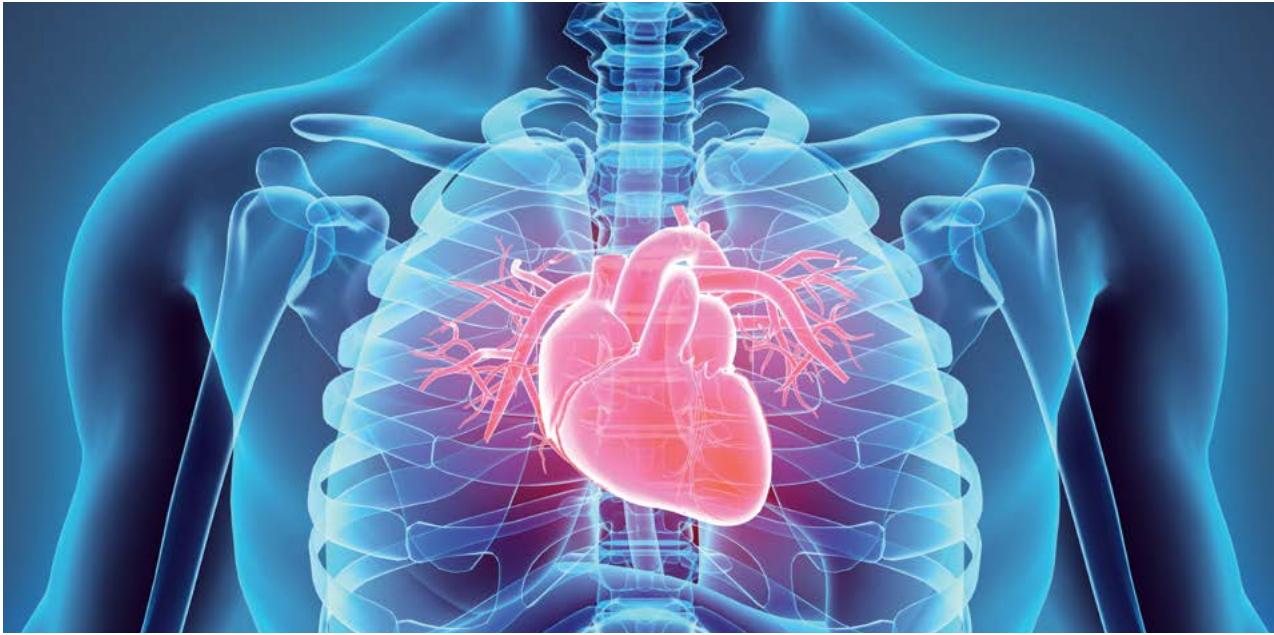
Inaugural Dentistry Dell Technology Adoption Award

The year 2017 marks the inaugural Faculty of Dentistry Dell Technology Adoption Award. This award recognises academic staff who have adopted innovative technology to enhance the learning of our students.

Our faculty is committed to delivering a distinctive Sydney education to all of our students. With the generous sponsorship of Dell, it has been possible to celebrate a member of academic staff who has embodied excellence in using technology for the benefit of teaching.

The award and prize, a Dell laptop computer, was presented to Dr Susie Dracopoulos, who was chosen by a panel comprised of academic and professional staff as well as representation from the student body. Dr Dracopoulos has been working to integrate the use of apps into teaching as well as introducing new virtual simulators for teaching clinical skills.

We are very fortunate to have such innovative members of our faculty and the support of Dell to help reward such amazing contribution to dental education.



Getting to the heart of the problem: how do vascular pathologies affect oral health?

Thanks to a US\$286,000 grant, our researchers will be able to participate in a comprehensive longitudinal study of the effect of vascular pathologies on cardiac and oral health.

A team of epidemiologists, cardiac researchers and dentists led by Professor Joerg Eberhard, Chair of Lifespan Oral Health, received a US\$286,000 grant from the Else Kröner-Fresenius Stiftung (Foundation) to conduct, for the first time, a longitudinal assessment of changes of vascular pathologies leading to heart attack or stroke, and oral health.

Their work will be part of the NAKO Health Study, which aims to comprehensively assess the health of 200,000 Germans.

The NAKO is planned as a long-term study over 20 to 30 years led by the prestigious Helmholtz and Leibniz Gemeinschaften (Society) to understand the causes

of common diseases like cancer, dementia, diabetes, infectious and cardiovascular diseases.

The funding will provide the team with the capability to conduct baseline assessments including early pathological changes of blood vessels to determine the risk for heart attack or stroke. A second assessment is scheduled five years later to identify the association between changes of vascular and oral health in a longitudinal sense.

In addition to the high scientific value of this study, the current funding is an important step to further integrate oral health research into medical research aimed to ease global burdens.

Celebrating excellence at the Faculty of Dentistry's Prize Giving Ceremony

The annual ceremony recognises the best and brightest students and staff, and honours outstanding achievements, leadership and academic excellence from 2016.

On Thursday 8 December 2016, the Dean, Professor Chris Peck, welcomed award winners, prize recipients and their families, donors and guests at the 2016 Faculty of Dentistry's Prize Giving Ceremony.

"I am enormously proud of the accomplishments of our students," said Professor Peck. "For those graduating, from today you join the proud ranks of University of

Sydney alumni and we expect to see you back at the University in one capacity or another, whether it be in your quest for lifelong learning, to advance oral health through research, or to share your expertise and experiences with future students."

He added: "I am extremely grateful to our benefactors including individuals, industry partners, alumni and

professional organisations who have contributed generously to the faculty by establishing scholarships and providing state-of-the-art technology that supports and promotes our students' intellectual endeavours and enhances the student experience. Without this unity, we simply could not offer the academic opportunities that we do."



Award recipients at the 2016 prize giving ceremony

Prize	Recipient
Anthony P. Martin Prize for Proficiency In Clinical Dentistry	Stavroula Prokopiou
Associate Professor Geoffrey McKellar Prize in Oral Surgery	Geetika Sachdeva
Australian Dental and Oral Health Therapists Association New South Wales Prize (ADOHTA)	Laura Hedges
Australian Society of Orthodontics Prize	Sophie Brown
Australian Society of Periodontology Prize	Bhavisha Thankey
Brigadier Gordon Rowell Prize (shared prize)	Dean Tan, Poon-Yu Khut
Campbell Harry Graham Prize	Dharini Ravindra
Colgate Cariology Award	Dean Tan
Colgate Oral Care Award	Isean Chew
Dean's Recognition Prize – Sponsored by GC Australasia (shared prize)	Jane Chung, Jessica Fung, Ronald Ho, Claire Ko
Dental Alumni Society Prize No 1	Jenny Hong
Dental Alumni Society Prize No II	Ellis Vakirtzis
Dental Alumni Society Prize No III	Abdo Ibrahim
Dental Alumni Society Prize No V	Geetika Sachdeva
Dental Hygienists' Association of Australia (NSW) Prize	Danya Darwiche
Dentsply DClinDent Research Prize	Dr Hugh Lenehan
Dentsply/Faculty Research Award – Bachelor of Oral Health (shared prize)	Danya Darwiche, Marnie Hannon
Dr E John Wilkinson AO Prize	James Young
Dr John H Wilson Prize for Proficiency in Prosthetic Dentistry	Jae Young Ahn
Dr John Mayne Prize	Xiaodan (Lucy) Sun
Hu Friedy Golden Scaler Award	Isean Chew
Goldsworthy-Sullivan Memorial Prize	Rosemary Eleanor Golding
G.S. Caird Scholarship in Prosthetic Dentistry	Tongxin (Grace) Wu
H. J. V. Cusack Memorial Prize	Rui Dai
John Stephen Hill Memorial Prize	Victor Hanna
Judith & Dr Mario Adamo Implant Innovation Scholarship	Dr Daniel Tan
Martin Halas Prize No I	Mary Rose Hatem
Martin Halas Prize No II	Katharine Dal Santo
Noel D Martin Memorial Prize (shared prize)	Jun Liu, Anusha Gopathy
Peter Kaleski OAM Prize	Dylan Evans
RG Schamschula Prize	Dr Antonia Scott
Richard Belitho Bush Memorial Prize	Nikita Randhawa
Roland Bryant Teaching Awards – Bachelor of Oral Health	Wendy Currie
Roland Bryant Teaching Awards – Doctor of Dental Medicine, Years 1/2 (shared prize)	Year 1: Dr Susie Dracopoulos Year 2: Dr Delyse Leadbeatter
Roland Bryant Teaching Awards – Doctor of Dental Medicine, Years 3/4	Associate Professor Hedley Coleman
Royal Australasian College of Dental Surgeons (shared prize)	Vania Chow, Jack Huynh, Miree Cho, Shota Shimada
Rudolf Gunz Medal	David Keir
Stephen Maxwell O'Henley Prize	Geetika Sachdeva
Sydney Levine Prize in Periodontics	Rui Dai
W. J. D. Partridge Memorial Scholarship	Joshua Massad

Establishment of the Noel Martin Visiting Chair in 2017

The Faculty of Dentistry is proud to welcome Professor James Deschner as the first appointment to this prestigious new chair.

Professor Noel Martin was one of the most influential figures in the history of dentistry at the University of Sydney; he was Dean of the Faculty of Dentistry from 1970 until his retirement in 1988 and a leading advocate for change in Australian dental practice.

His successful championing of the fluoridation of drinking water in NSW is arguably one of our greatest gifts to society. Following his death in 2006, alumni appeals raised funds to honour Professor Martin's contribution to dentistry and the community.

These funds are being used to establish a new academic position in Dentistry, the Noel Martin Visiting Chair, which was recently announced by the Dean, Professor Chris Peck. The inaugural appointee, commencing in March 2017, is Professor James Deschner, Head of the Section of Experimental Dento-Maxillo-Facial Medicine at the University of Bonn, Germany.

In 1994, Professor Deschner graduated from the Free University Berlin, and started his career as an assistant professor in the Department of Periodontology at the Humboldt-University of Berlin, moving to Cologne after four years.

From 2002 to 2006, he pursued his research interests first in the Department of Oral Medicine and Pathology at the University of Pittsburgh and then at Ohio State University. During this time, his experiments were designed to unravel the role of biomechanical forces in periodontal and cartilage cells under inflammatory conditions, as found in periodontitis, arthritis and orthodontic tooth movement.

Returning to Germany in 2006, Professor Deschner continued his clinical and research work in the Department of Periodontology and Operative Dentistry at the University of Bonn.



Professor
James Deschner

Autumn 2017

In 2008, he became the Head of the Clinical Research Unit investigating “Etiology and Sequelae of Periodontal Diseases – Genetic, Cell Biological and Biomechanical Aspects”, based on a multimillion Euro grant from the German Research Foundation and the medical faculty of the University of Bonn between 2008 and 2015. The unit’s major goal was to improve the prevention, disease control and therapy of periodontitis through a better understanding of the causes and effects of periodontal diseases and the regenerative processes in the involved tissues.

In 2015, Professor Deschner became the Head of the newly created Section of Experimental Dento-Maxillo-Facial Medicine at the University of Bonn. This section is dedicated to basic and translational research through close collaboration with clinical departments of the dental school and numerous medical departments, such as the Department of Pharmacology and the Department of

Internal Medicine/Cardiology. In addition to biomechanics, the group’s focus is the interactions between periodontal diseases and diseases of whole body, such as obesity, diabetes or cardiovascular diseases. This alignment with our faculty’s vision of putting the mouth into health made Professor Deschner a prime candidate for the inaugural Noel Martin Visiting Chair position.

It is our intention that the individuals chosen for future appointments to the chair will share this strong focus on prevention and a whole-of-body approach to dentistry. They will provide academic as well as research leadership, drive innovation and build international research links for the future. Students and the dental profession will have access to their expertise through lectures and meetings.

Information about Professor Deschner’s lecture program in 2017 is being circulated through the faculty’s usual communication channels.

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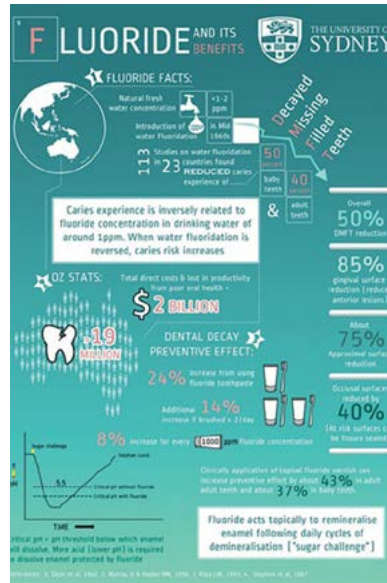
University students and sugar-sweetened beverages: An oral health education intervention

Faculty of Dentistry researchers have been probing a sticky subject – how to encourage at-risk groups to limit their own consumption of sugary drinks.



Left: A sample poster resource developed by the research team

Right: Posters from the Australian Dental Association and the rethinksugarydrinks.org campaign used on billboards throughout the health promotion intervention



A recent study by researchers at the Faculty of Dentistry investigated the knowledge, behaviours and attitudes of University students around oral health, sugar-sweetened beverages (SSBs), and the effectiveness of targeted health promotion interventions.

The World Health Organization has stated that dental caries is a non-communicable disease that is linked to common preventable, lifestyle-related risk factors including diet. Epidemiological data has shown that there has been an increase in both the sale and consumption of SSBs, which poses a health risk to obesity, diabetes, cardiovascular disease and poor oral health outcomes.

“Sugar-sweetened beverages pose a dual threat to oral health in young adults, as the high sugar content feeds caries-causing bacteria, while the acidic nature of these beverages further exacerbates dental erosion and risk of dental caries,” says Carrie Tsai, paediatric dentist, lecturer and co-investigator.

The first objective of the project was to test the effectiveness of the individual oral health education interventions. A sample cohort of 300 first-year students studying at the University of Sydney completed a questionnaire that assessed their baseline and follow-up behaviours, knowledge and attitudes towards SSBs and oral health.

The second objective was to provide a comparison of two health education modalities: educational posters alone, or a 10-minute oral presentation in addition to the posters. Health Science and Science students received the former and a separate cohort of Science students received the latter.

The study found that most students had adequate knowledge about the detrimental effects of SSBs on their oral health and general health. However, we found that 95% of the student population consumes SSBs twice a day, while only two-thirds drink tap water twice a day.

“For the adolescent, university presents a unique time in life, with new freedom to make choices, which may have long-term effects on both their general and oral health. We hope that our findings will influence informed decisions and lifestyle changes that impact their oral health and general health outcomes for life. The findings can also serve as a pilot for future projects targeting SSBs and the University population,” said Rebecca Chen, associate lecturer and research leader.

Feedback from participants included better modes of delivery of the health messages, such as an online platform, as the reach of posters was limited. As a result, aspects of this study will be incorporated into the larger ‘health and wellbeing’ unit of study developed by the Healthy Sydney University group in 2017.

Joining the dots with Juliano Morimoto

Crossing disciplines to better understand the connections between systemic diseases and oral health.

Juliano Morimoto is a postdoctoral research associate at the Charles Perkins Centre Oral and Systemic Health Research Node. We spoke with him to find out how he is working with scholars from a range of disciplines to explore the interconnectedness of our environment, our food and our health.

What is your background and what drew you to dentistry and, in particular, a career in research?

I obtained my Bachelor of Science in Biology at the Federal University of Paraná in Brazil with the financial aid of the National Council for Scientific and Technological Development (CNPq). From there, I developed various projects in Brazil and



Italy using particle accelerators before being offered a CNPq-funded PhD in Zoology at the University of Oxford. During this period, my research spanned several areas, from how atoms interact and assemble themselves into magnificent proteins essential to DNA stability, to the effects of diet on sexual reproduction.

Despite having worked in a number of different disciplines, my interest in oral research was awakened early in my career and has always been my primary area of interest. During my undergraduate studies, I developed a project investigating the nutritional conditions leading to oral biofilm formation by cariogenic bacteria. I also studied the effects of polyphenols on the acquired pellicle on tooth surfaces. Later, my interest in merging nutrition and dentistry brought me to the Charles Perkins Centre (CPC) at the University of Sydney, where I'm now a postdoctoral research fellow working with the Faculty of Dentistry's Professor Joerg Eberhard at the Oral and Systemic Health research project node.

This node is an interdisciplinary initiative to address current knowledge gaps involving oral and general health. Estimates from the latest Australian Institute of Health and Welfare report state that oral disease is the 60th major contributor to the loss of healthy life. My role as a researcher at CPC is to explore the links between oral and systemic health. By connecting basic sciences, clinical research, population health surveys, and education, the node works to ease the burdens of oral and general health of our century.

Here, we value innovation in research, and by combining the expertise of leading scientists in nutrition, biology, medicine, and dentistry, we can address the underlying mechanisms linking oral and systemic health with emphasis on the links between malnutrition, gum disease, dental decay, and cardiovascular and metabolic diseases, the leading causes of death in the world.

Our innovations start early in our research. By adopting an interdisciplinary approach, we can explore new research directions while expanding our vision, combining both clinical data and basic science. For example, we are the first research group in the world to pursue funding to establish fruit fly insects as a model in oral research. In this project,

we are researching the immune response to infection by oral microorganisms in different diets as well as at different ages.

Innovative projects like this are helping advance knowledge of the underlying biology of diseases and more importantly, form the basis for better disease prevention strategies and patient management.

What projects are you working on now?

In addition to the project involving fruit flies, I am also working on establishing an animal model of gum inflammation that will allow us to test the relationship between oral health and cardiovascular disease in response to age, exercise activity, sleep patterns, and diet. Furthermore, I am interested in the influence of diet on the natural development of periodontitis, where the aim is to investigate how the quantity of sugar, protein and fat ingested by healthy mice can contribute to periodontitis.

Overall, the projects I am involved with aim to ease the burdens of oral and systemic diseases by understanding the underlying mechanisms that links them, and how environmental risk factors such as diet can influence their onset and progression.

What inspires you?

Nobel laureate in physics, Richard P Feynman once said, "So I got a great reputation for doing integrals, only because my toolbox was different from everybody else's." Like Feynman, I would like to think that the Oral and Systemic Health research project node is, in a sense, creating a 'toolbox' in oral research that is different from everybody else's, and that I am contributing to this new perspective. Through collaboration with researchers at the CPC, we are promoting the reputation of the Faculty of Dentistry, generating new ideas and translating knowledge into action aimed to transform lives within our local community and around the world.

Find out how you can support the **Faculty of Dentistry** and **Charles Perkins Centre** in transforming the lives of Australians.

With every gift to the University of Sydney, donors become part of the **INSPIRED** campaign to support the University of Sydney.

– sydney.edu.au/dentistry/give/

Beyond the gut: exploring the microbiome

Meet Dr Christina Adler, a leading academic improving children's health at the Faculty of Dentistry.

Dr Adler's research focuses on understanding how the oral microbiome evolves from a state of health to the current state of highly prevalent chronic infection and disease.

We spoke to Dr Adler to find out about her research and how it is helping to transform the future of dentistry as we know it.

Tell us about your research.

My research focuses on trying to understand how the oral microbiome, which encompasses the complete microbial community in the mouth, contributes to maintaining health and causing oral disease. The particular oral disease I work on is childhood dental decay. Dental decay is a large problem in Australia, affecting approximately 50% of kids at six years of age.

I am leading a National Health and Medical Research Council (NHMRC) project grant that is investigating how an individual's environment and their genetic makeup drive variation in the composition of the oral microbiome to produce childhood dental decay. To do this, I am genetically analysing the bacterial makeup of dental plaque from a cohort of Australian twins. This is part of the longest ongoing study in the world examining dental decay in childhood.

How is your research helping to "put the mouth into health"?

My research is not just looking at how the oral microbiome affects the mouth, but how it impacts on microbial communities at other body sites. For example, I was recently invited by the Australian Academy of Sciences to take part in a multidisciplinary conference on the human microbiome. Through this conference I was able to link with researchers investigating gut and skin microbiomes to see if we can start exploring human health from a whole-body perspective.

How will your research findings impact the future of dentistry?

We hope that by investigating how the oral microbiome causes dental decay, we can help to reduce the high prevalence of this disease among Australian children. The outcomes of this study will impact dentistry in two ways. Firstly, by identifying what factors in an individual's environment control dental decay at the microbial level, we will help to direct prevention measures. Secondly, by studying which components of the microbiome cause decay, we may be able to inform the development of new treatments, such as probiotics to restore the oral microbiome to health.



What drives you to do research in your STEMM (science, technology, engineering, mathematics and medicine) field?

I am attracted to working in science because it enables me to try and help solve significant health problems, such as the issue of dental decay. Additionally, working in a STEMM area is rewarding because it enables me to apply problem-solving skills and is constantly changing and challenging.

The University is working towards creating a more inclusive culture. What do you see as the most important steps in achieving this?

I think a great step towards achieving an inclusive culture has been the University recognising there was an issue and implementing the Science in Australia and Gender Equity program. At a personal level, the University's flexible return-to-work program after

maternity leave has helped me keep contributing as a female researcher in the University system.

What would you like to see more, in terms of gender equity, in your field/industry?

I would love to see more female academics in leadership roles. It can be disheartening as an early career researcher to not see many females in senior roles.

What piece of advice would you give to a woman looking to begin a career in the field of STEMM?

When I was beginning my career in science, I was fortunate enough to have a fantastic role model in my honours supervisor, Dr Denise Donlon from the University of Sydney. She had great advice for starting in science: research something you are passionate about, get advice from mentors and be prepared for the ups and downs!

Dr Daniel Tan receives the Judith and Dr Mario Adamo Implant Innovation Scholarship

We interviewed Dr Daniel Tan, prosthodontic registrar and winner of the first Judith and Dr Mario Adamo Implant Innovation Scholarship in 2016. The scholarship aims to encourage research in implant dentistry and further understand issues associated with implantology.

What drew you to a career in dentistry?

After graduating from high school, I decided to follow in my parents' footsteps and started a degree in engineering. A year into my studies, however, I realised it was not the profession for me.

After careful consideration, I decided to pursue a career in dentistry. Working in this field has allowed me to make use of my problem-solving abilities and desire to work independently, while leading an organised team. My time management, dexterity, and listening skills have helped me to develop clinical proficiency and interpersonal relationships. Throughout my undergraduate dentistry degree, I knew I had made the right decision as I felt a sense of satisfaction being able to improve people's health and wellbeing while being engaged in something about which I was passionate.

Why did you decide to specialise in prosthodontics?

I decided to specialise in prosthodontics at the University of Sydney as it is the only course in Australia that not only offers fixed prosthodontics, but also removable and maxillofacial prosthodontics, as well as orofacial pain in its curriculum.

The prosthodontic program has helped to transform my thought processes, scrutinise and aid identification of valuable literature, as well as hone my clinical skills. In addition, my background in

engineering helped me to develop prosthetic design concepts and better understand the limitations and choice of materials.

Please provide us with a brief overview of your research. What makes it innovative?

The research project I am working on investigates the before and after changes in cognitive brain function and oral health-related quality of life during a specific treatment protocol. This dental treatment protocol is called progressive oral rehabilitation. Participants are initially transitioned from complete removable prostheses to implant-retained mandibular overdentures, and finally on to fixed mandibular prostheses.

The before and after changes in chewing performance, cognitive ability (learning, memory and spatial awareness), cortical activity and quality of life will be assessed. The outcomes of this study may emphasise the importance of oral health as maintenance and/or improvements in mastication may enhance the general health of patients including cognition and quality of life.

The Judith and Dr Mario Adamo Implant Innovation Scholarship helps students solve a problem related to implant dentistry. What problem does your research aim to solve?

As I have an interest in implants and oral rehabilitation, my goal was to accomplish research



Left to right:
 Professor Chris Peck, Dean of the Faculty of Dentistry; Judith Adamo, Daniel Tan, scholarship recipient; Professor Iven Kleinberg, Head of Discipline of Oral Rehabilitation; and Dr Mario Adamo at the 2016 Faculty of Dentistry Prize Giving Ceremony

involving the rehabilitation of edentulous patients and its significance on general health, in particular cognition and quality of life.

The World Health Organization recognises tooth loss and reduced masticatory function to be an epidemiological risk factor for dementia. Fortunately, emerging evidence suggests that improving masticatory ability may reduce the risk of cognitive decline and may even support maintenance of higher-level cognitive skills. However, current animal and human studies are limited by confounding factors and sample size. Furthermore, little is known about the role of progressive oral rehabilitation and its impact on cognition.

Therefore, the aim of this study is to assess changes in masticatory performance and quality of life induced by a specific implant oral rehabilitation (two-implant-retained overdentures) and its association with cognitive ability and function. It is hypothesised that improvements in mastication and quality of life from implant rehabilitation is correlated with improvements in cognition depicted by enhanced cortical activity and neurocognitive responses.

What is the clinical significance of this study?

The study will add to the significance of maintaining teeth for function and aesthetics and acknowledges the importance of prosthodontic rehabilitation as a requirement for general health. It may highlight

an additional dimension of responsibility for the clinician to consider implant rehabilitation in edentulous patients. The study will also assess the need to maintain and restore masticatory ability, not only to improve quality of life, but to assist in the prevention of cognitive decline.

The findings may contribute to further research investigating the association between oral rehabilitation and dementia in the edentulous population and may help to reduce the burden on the public health system.

How will the scholarship help you to achieve your research goals?

Functional magnetic resonance imaging (fMRI) recordings are crucial for this study to proceed. It will be used to investigate masticatory-related cortical changes in specific brain regions. The scholarship will facilitate fMRI recordings to be carried out and collected data to be interpreted.

What are the next steps after this?

My project has a second part involving the transition of two-implant-retained overdentures to implant-supported fixed prostheses. The definitive goal is to replicate these studies with larger participant numbers to allow more robust statistical analyses to further investigate the association between progressive oral rehabilitation and cognition.

Alumnus wins top US Presidential award

Dr Manish Arora (PhD '06) has received one of the Obama administration's highest honours: the Presidential Early Career Award for Scientists and Engineers.

Dr Arora received this award for his leading research on the lifelong health effects of environmental factors, such as why there has been such a worrying increase in conditions like autism in recent years.

Working at the Icahn School of Medicine at Mount Sinai, New York, where he is Vice Chairman of Environmental Medicine and Public Health, and Division Chief of Environmental Health, Dr Arora was humbled to receive his letter from the White House.

“It made me think of my mother who was always a big proponent of education, because she herself was denied one,” he says.

The 2017 awards went to 102 outstanding science and engineering professionals in the early stages of their independent research careers (within 10 years of a PhD), who are employed or funded by government departments and agencies, including those working for NASA, the Department of Defence and other core elements of US government science.

After earning his PhD at the University of Sydney in 2006, Dr Arora started working at the Faculty of Dentistry. “There was such a concentration of diverse intellectual capacity,” he remembers. “It was a vibrant and nurturing environment.”

Dentistry connects directly with his research at Mount Sinai. “Teeth constantly record what you’re exposed to,” he explains. “They’re like a biological hard drive. I worked with nuclear physicists and structural chemists to develop laser-based methods to analyse teeth and retrieve the information.”



Dr Manish Arora (PhD '06)

As a result of this work, Dr Arora was approached to establish a new, innovation-centred laboratory at Mount Sinai Hospital. It has since grown into a national, federally funded centre, with plans underway to establish a new, global institute. His team are working on technologies that range from biochemical tests for environmental pollutants, to new robots that can analyse tissues more accurately.

“We apply the methods we develop to studies of how brain development is affected by chemicals and other factors in the environment,” he says. “This has implications for a range of conditions like autism and schizophrenia. Our aim is to improve human health at a population level.”

Meanwhile, his collaboration with the Faculty of Dentistry continues through a visiting position. He has developed a research methods course for all clinical students and provides expertise on data sciences and environmental health to researchers.

Dean, Professor Chris Peck, congratulates Dr Arora and acknowledges him as an early leader in a field that is giving insights into a surprising range of medical conditions. “Dr Arora is advancing our strategic mission of putting the mouth into health,” says Professor Peck. “This award is a fitting acknowledgement of his intellect and foresight to integrate oral and systemic health.”

Upcoming events

CED.70 conference

1 and 2 December 2017

CED.70 is a two-day scientific conference celebrating 70 years of professional development services provided by Continuing Education in Dentistry (CED).

Originally formed as the Post-Graduate Committee in Dental Science in 1947, CED is Australia's leading provider of continuing professional development. It has contributed significantly to Australia's dental profession through the provision of independent, evidence-based education for dental practitioners for their continuing professional development, emphasising lifelong learning and a strong association with the University of Sydney.

Exploring the theme of Proven Leadership, Commitment to Education and the Pursuit of Clinical Excellence, the CED.70 conference will comprise morning plenary presentations and afternoon concurrent sessions

The morning sessions will focus on scope of practice and private and public dentistry, featuring high-profile keynote speakers recognised for their experience in leadership, education and clinical excellence. These sessions will culminate in panel discussions with distinguished guests and keynote presenters.

The afternoon sessions will explore themes including the relationship between oral and systemic health, aesthetics and wellbeing.

Conference details

Date: Friday 1 and Saturday 2 December 2017

Location: Abercrombie Building, Darlington Campus

Cost: \$1370 (standard); \$1164 (for alumni)

CPD points: 14 over two days

More information

dental.ce@sydney.edu.au

02 9351 8348

– sydney.edu.au/dentistry/ce

CED committee

The conference will be shaped and led by current CED committee members, including academic staff from the Faculty of Dentistry, alumni, general practitioners (GPs) and other professionals.




- Dr Michael Burke: GP (alumnus: BDS '87)
- Dr Zephie Comino-Cerny: GP (alumna: BDS '72 and PhD '00)
- Professor Chris Peck: Dean of the Faculty of Dentistry (alumnus: MScDent '95 BDS '88 GradDipScM(PainMgt) '02)
- Dr Trupta Desai: GP
- Dr Susie Dracopoulos: GP; lecturer, Faculty of Dentistry (alumna: BDS '92)
- Adjunct Associate Professor Peter Duckmanton FRACDS FICD FPFA: endodontist (alumnus: BDS '78 MSc '87)
- Adjunct Associate Professor James Hawkins AM, FRACDS: orthodontist (alumnus: BDS '61 MSc '64)
- Dr Ken Hooi FPFA: CED Committee Chair, prosthodontist (alumnus: BDS '92 DipClinDent(Sedation/Pain) '03 MSc '10)
- Dr Phil Kelly: prosthodontist
- Dr Mark Sinclair: GP; solicitor (alumnus: BDS '80)
- Dr Alicja Smiech: Sub dean for Clinical Affairs – Sydney Dental Hospital, Faculty of Dentistry
- Ms Robyn Watson: hygienist; unit of study coordinator, Faculty of Dentistry
- Dr Judith Werner: GP; lecturer, Westmead Centre for Oral Health (alumna: BDS '79)
- Dr Alan Yap MRACDS (Pros): prosthodontist (alumnus: BDS '01 MSc '08).

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